DISCUSSION STARTER

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Leveraging Zambia's E-voucher for soil health, diversification and nutrition

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Background

Globally, governments spend an estimated USD 800 billion annually on agricultural support (OECD, 2025), yet these investments often remain concentrated on a narrow set of staple crops and inputs. While such programmes have contributed to increased production and food security, there is growing recognition that agricultural support should also contribute to improved soil health, climate resilience and nutrition outcomes. As countries seek to transform their food systems in response to climate change, malnutrition and environmental degradation, attention is increasingly shifting towards how public agricultural investments are designed and targeted.

Zambia's transition to a fully electronic voucher (e-voucher) system under the Farmer Input Support Programme (FISP) provides a unique opportunity to rethink how agricultural subsidies influence farmer decisions. The e-voucher system is an electronic credit system where eligible farmers receive a government subsidy in the form of electronic credit. By enabling farmers to redeem input credit through private agro-dealers and choose from a wider range of inputs, the reform has the potential to contribute to improved soil health, increased climate resilience, greater crop diversification and enhanced nutrition outcomes. However, diversification requires more than access to inputs. Farmers also need reliable markets for alternative crops. Institutional procurement programmes, such as Zambia's Home-Grown School Meals (HGSM) Programme, represent an important opportunity to create predictable demand for nutrient-dense crops while simultaneously improving children's diets, thereby strengthening the links between agricultural support, market development and nutrition.

Recognizing these opportunities and challenges, Clim-Eat, in collaboration with the Civil Society Scaling-Up Nutrition Alliance Zambia, convened a multi-stakeholder dialogue to explore how Zambia's e-voucher reforms can better support soil health, crop diversification and nutrition. Bringing together representatives from government, farmer organizations, agro-dealers, civil society, researchers and development partners, the dialogue sought to identify practical opportunities to strengthen the contribution of agricultural subsidies to more sustainable, healthy and resilient food systems.

This brief presents the key findings from the consultations and workshop discussions, highlighting stakeholder perspectives on the opportunities, barriers and policy options for leveraging Zambia's e-voucher system to advance soil health and nutrition through input diversification.

Nutrition

Zambia faces a triple burden of malnutrition. According to the 2024 Zambia Demographic and Health Survey (ZDHS), 32% of children under five are stunted, 12% are underweight, and micronutrient deficiencies are widespread. At the same time, overweight is emerging among both children and adults (ZSA *et al.,* 2024).

Poor diet quality is a key underlying driver of malnutrition. Only around 22% of children aged 6–23 months met Minimum Dietary Diversity (MDD), reflecting diets heavily dominated by staple foods and limited consumption of nutrient-rich foods such as legumes, fruits, and animal-source products (ZSA *et al.,* 2024). Low dietary diversity contributes to undernutrition, while poor overall diet quality, including reliance on energy-dense, nutrient-poor foods, also increases the risk of overweight and diet-related non-communicable diseases.

Agriculture

Agriculture is central to Zambia's economy and rural livelihoods, with smallholder farmers representing approximately 75% of farming households. Production is dominated by low-input, rainfed systems, with maize as the principal staple crop cultivated by around 90% of smallholders.

Smallholder farmers face multiple constraints, including limited access to quality inputs, finance, extension services and reliable markets, as well as growing challenges from climate-related impacts, such as delayed starts of the growing season, unreliable rainfall and natural disasters, particularly floods and droughts, which have become more frequent and severe in recent years.

Soil Health

Declining soil fertility is a major constraint to agricultural productivity in Zambia. Many soils are characterized by low organic matter, high acidy levels, nutrient depletion and degradation, with significant variation across agro-ecological zones. As a result, many smallholder farmers continuously expand cultivation into new fertile natural habitats, contributing to further deforestation and soil degradation (Chapota, *et al.,* 2016). Studies in Eastern Zambia report generally *low soil organic carbon, nitrogen, and cation exchange capacity,* alongside slightly acidic pH in many areas, indicating poor fertility status and the need for tailored fertility management practices (Omondi, *et al.,* 2025). Blanket fertilizer recommendations have historically contributed to inefficient input use, as they do not reflect location-specific soil conditions (Chapota, *et al.,* 2016). Climate change further exacerbates these challenges, with increasing frequency of droughts and floods accelerating soil degradation and reducing yields. Addressing these challenges will require policies and incentives that encourage farmers to adopt diversified, site-specific and sustainable soil management practices, while ensuring access to the inputs and knowledge needed to improve soil fertility over the long term.

Crop diversification

Smallholder farming systems that rely on rainfall are central to rural livelihoods, yet they are increasingly under pressure from soil degradation, declining fertility, and growing climate variability. Within this context, crop diversification is widely seen as an important approach to strengthen farm productivity, enhance dietary quality, and support more resilient and sustainable pathways out of poverty and food insecurity (Nyamayevu, *et al.,* 2024). Legumes and cover crops improve soil fertility through biological nitrogen fixation, enhance soil structure, and contribute to more resilient farming systems. At the same time, agricultural diversification is critical for improving the nutritional outcomes for children (Mofya-Mukuka & Kuhlgatza, 2016). Crop diversification has also been identified as an important adaptation measure to climate change and variability in smallholder farming systems in Zambia (Wang, *et al.* , 2025). For example, farmers diversify when facing heat stress in December by planting sunflowers, soybeans and groundnuts (Wang, *et al.,* 2025).

About 90 percent of smallholders grow maize as their main crop, which covers about 57 percent of all arable land in Zambia (World Bank, 2022). Tubers and cash crops account for around 18 percent across different farm sizes, and legumes occupy about 12 percent (World Bank, 2019). The diversity of crops cultivated by smallholder households in Zambia is limited. The Rural Agriculture and Livelihoods Survey (RALS) data showed most smallholder households (80%) cultivate three or fewer crops, with 18% of farmers cultivating only one crop, 32% cultivating two crops and 29% cultivating three crops (Mofya-Mukuka & Hichaambwa, 2016)

A key structural barrier to diversification is the limited and uncertain market demand for non-staple crops. While maize benefits from relatively stable and institutionalized market channels, markets for legumes and other nutrient-rich crops remain fragmented and risky. Without stronger demand-side incentives, farmers are unlikely to shift production patterns, even where input choices are more flexible. Studies have also shown that barriers to increase crop diversification include lack of access to inputs and the size of land (Chitambala & Chibomba, 2025).

Political momentum for diversification

The Zambia policy framework increasingly recognizes the importance of strengthening the link between agriculture and nutrition to improve the availability of and access to nutrient dense food to improve dietary diversity and nutrition outcomes. Zambia's Food-Based

Agricultural inputs at Agrodealer

Dietary Guidelines promote the consumption of foods from six food groups and emphasize diverse diets as a foundation for improved nutrition and health. Similarly, the Comprehensive Agriculture Transformation Support Programme (CATSP) highlights various interventions to ensure that agriculture leads to diet diversification, including a strong emphasis on increased production of nutrient-dense foods, including legumes. In addition, the Zambia Food Systems Pathways provide a blueprint for transforming Zambia's food systems ensuring that they are climate robust, inclusive, equitable to ensure nutritious foods and healthy diets for all resulting in minimum environmental and biodiversity deterioration (GRZ, 2023).

Repurposing agriculture support - Zambia's e-voucher

Zambia's nationwide transition to a fully e-voucher system represents a significant shift towards a more market-oriented and flexible subsidy model. By enabling farmers to redeem input credit through private agro-dealers and choose from a wider range of inputs, the reform has the potential to support more diversified, resilient, and nutrition-sensitive production systems. However, early evidence suggests that this potential remains largely unrealized and in practice, the system continues to reinforce maize-dominated production patterns. Data from the 2024–2025 FISP review (2026) shows that fertilizer (97%) and maize seed (71%) dominate the input purchases, while more diverse and soil-enhancing inputs such as legumes, cover crops and vegetable seeds are rarely included in farmers' voucher expenditures. This indicates that increased flexibility on the input side alone is insufficient to drive meaningful diversification.

Objectives

Within this context, the optimalization of FISP represents a key opportunity to repurpose public agricultural spending. Critical evidence gaps remain regarding how the e-voucher system can play a central role in advancing soil health, strengthening resilience, and improving nutrition outcomes and aligning with market demand. This brief seeks to generate actionable recommendations on how Zambia's e-voucher system can (1) incentivize greater uptake of soil health-enhancing and nutrition-sensitive inputs; (2) address behavioral and market constraints limiting diversification; and (3) strengthen linkages with institutional procurement programmes, particularly the Home Grown School Meals (HGSM) programme.

A field visit to Chilanga District engaging the District Commissioner· two agrodealers· and evoucher farmer recipients

Leveraging the e-voucher for soil health, diversification and nutrition

Methodology

This work draws on a qualitative, consultative approach to capture perspectives on Zambia's e-voucher system. Evidence was generated through a qualitative consultation process, involving semi-structured interviews with agro-dealers, focus group discussions with farmers and key informant interviews with School Health and Nutrition (SHN) focal points in Kapiri Mposhi and Chikankata district in Central and Southern Province respectively.. These insights were discussed in a multi-stakeholder workshop involving representatives from government, civil society, farmer organisations, development partners and the private sector to inform practical recommendations.

Agro dealer perspective

Agro-dealers acknowledged that the e-voucher system has expanded business opportunities and increased farmer access to inputs. However, they reported that approximately 80–90 per cent of their sales remain concentrated on maize-related inputs due to strong farmer demand and lower commercial risk. Delayed reimbursement under the e-voucher system, limited working capital, and weak demand for alternative crops discouraged agro-dealers from stocking diversified inputs. Many described a self-reinforcing cycle in which farmers do not demand alternative crop inputs because they are unavailable, while agro-dealers do not stock them because demand is low. Agro-dealers highlighted the need for more reliable payment systems, stronger market opportunities for alternative crops, and incentives to stock diversified inputs.

Workshop participants largely echoed the challenges identified by agro-dealers and highlighted several broader systemic barriers to diversification. Participants noted that delayed payments and the high cost of seeds and inputs can limit agro-dealers' ability to maintain stocks of diversified inputs throughout the season. They further observed that fragmented markets, limited access to reliable buyers, and weak coordination among value chain actors reduce incentives for both farmers and agro-dealers to invest in alternative crops. Participants also pointed to a reinforcing cycle in which low demand for alternative crops discourages input suppliers from stocking diversified inputs, while limited availability of such inputs constrains farmers' ability to diversify. In addition, concerns were raised that existing incentive structures within the agricultural value chain, including commissions and promotional support for maize-related inputs, may encourage agro-dealers to prioritize maize over alternative and nutrient-dense crops. These factors collectively contribute to the limited availability and uptake of diversified inputs and crops.

Farmer perspective

Farmers reported that the e-voucher system has improved access to agricultural inputs and increased flexibility compared to the direct input support. However, maize remains the dominant crop due to its role in household food security and the availability of relatively reliable markets through the Food Reserve Agency (FRA), a Government agency that purchases maize from smallholder farmers at a predetermined price. While farmers recognize the benefits of diversification for nutrition, income generation, soil fertility and climate resilience, they face significant barriers including limited access to diversified seed, high fertilizer costs, weak markets for alternative crops, and inadequate extension support. Farmers also noted that for some crops, particularly legumes, the purchase of new seed is not always necessary, as seed can often be retained and recycled from previous harvests. As a result, access to seed alone is not sufficient to drive diversification. Farmers indicated that they would be willing to diversify production if reliable markets, clear demand signals and access to appropriate inputs were available.

Workshop participants further highlighted a range of behavioral, financial and institutional constraints. The benefits of crop diversification and soil health investments are often realized over the long term, while many smallholder farmers prioritize immediate household needs and short-term returns. Cultural preferences and established farming practices continue to favor maize production, and resistance to unfamiliar crops and production practices can slow the adoption of diversification strategies. Participants noted that alternative crop inputs are often sold in package sizes that are too large and costly for many smallholder farmers, limiting their ability to diversify production Participants also noted that limited access to finance, insecure land tenure arrangements in some areas, and

insufficient farmer capacity to assess soil health, market opportunities and diversification options constrain investment in alternative production systems. Although the e-voucher system provides farmers with greater flexibility, its value is broadly comparable to support previously provided through fertilizer and maize seed packages. Farmers continue to prioritize these traditional inputs, viewing the voucher mainly as a means for securing fertilizer and maize seed, with alternative crops and inputs often considered only after these needs have been met. Farmers often rely on agro-dealers and peers for production decisions, reflecting broader gaps in extension and advisory services.

Linkages to institutional procurement

Schools identified significant potential for the HGSM Programme to stimulate local agricultural diversification and improve nutrition outcomes. School stakeholders expressed strong interest in sourcing food locally through farmers and cooperatives, using a wider range of nutritious foods into school meals. While the programme promotes local procurement, participants noted that procurement processes are often managed at district level, which can limit opportunities for direct engagement between schools and local farmers or cooperatives. Participants emphasized that strengthening linkages between schools, farmer groups and local suppliers could help create more predictable demand for legumes and other nutrient-dense crops, providing an important market incentive for diversification while improving the quality and diversity of school meals. Schools also highlighted opportunities to strengthen school gardens and nutrition education as complementary interventions that can reinforce healthy eating habits and awareness of diverse diets.

Policy opportunities for repurposing agricultural support for diversification

Across all stakeholder groups, a common message emerged highlighting that diversification is not only constrained by farmer awareness, but largely influenced by market incentives. While the e-voucher system has expanded access to inputs, sustained diversification will require stronger markets for alternative crops, improved coordination across the value chain, and closer alignment between agricultural support programmes and institutional demand, particularly through school feeding programmes.

1. Align the e-voucher system with diversified market demand

Sustainable crop diversification requires reliable and profitable markets for alternative crops. Government, private sector actors and development partners should work together to strengthen market opportunities for legumes, climate-resilient crops, biofortified crops, and other nutrient-dense foods or soil health enhancing crops through improved market coordination, aggregation, value addition and procurement mechanisms. Linking the e-voucher system to institutional procurement programmes, such as the HGSM Programme, represents a promising example of how public investment can simultaneously stimulate demand for diversified crops, create market opportunities for smallholder farmers, and contribute to improved nutrition outcomes. Strengthening such market linkages would provide farmers and agro-dealers with clearer incentives to invest in diversification.

2. Introduce targeted incentives for soil-enhancing and nutrient-dense crops

The e-voucher system should be redesigned to actively encourage the uptake of crops and inputs that contribute to soil health and dietary diversity. This could include dedicated allocations, incentive mechanisms, or bundled input packages that promote legumes, biofortified crops, soil amendments and crop rotation practices alongside staple crop production.

3. Strengthen agrodealer participation in diversified food systems

Agro-dealers are critical actors in shaping farmer choices. They need to be supported by improving the timeliness of e-voucher reimbursements, expanding access to working capital, providing training, and creating incentives to stock diversified crop inputs to increase the availability of seeds and technologies needed for diversification. Encouraging suppliers and agro-dealers to offer alternative crop seeds and related inputs in smaller, more affordable package sizes could further stimulate demand by reducing the upfront cost for farmers and lowering the commercial risk associated with stocking less familiar products. This would help break the current cycle in which low demand and limited

supply reinforce each other, while improving farmer access to a wider range of crop.

4. Expand extension services and farmer support on soil health, nutrition and diversification

Farmers require practical, locally relevant information on soil management, crop diversification, market opportunities and nutrition-sensitive agriculture. Strengthening extension services, farmer field demonstrations and behaviour change programmes, while integrating local knowledge and site-specific recommendations, would support informed decision making and increase adoption of diversified production systems.

5. Enhance coordination across agriculture, nutrition, education and market actors

Achieving diversification, improved nutrition and soil health requires coordinated action beyond the agriculture sector. Stronger collaboration between the Ministry of Agriculture, Ministry of Education, National Food and Nutrition Commission, schools, agro-dealers, private sector actors and farmer organisations is needed to align input support, market development, nutrition objectives and local procurement systems.

Conclusion

Zambia's transition to a fully electronic e-voucher system represents an important opportunity to repurpose agricultural support towards broader food system objectives. While the reform enables farmers to choose from a wider range of agricultural inputs and strengthen private sector participation, evidence from this study suggests that flexibility in input selection alone is insufficient to drive diversification. Farmers, agro-dealers and other stakeholders consistently highlighted the importance of reliable markets, appropriate incentives, affordable and accessible inputs, and stronger advisory services in shaping production decisions. Leveraging the e-voucher to support soil health, crop diversification and improved nutrition will therefore require a more integrated approach that aligns agricultural support with market development, institutional procurement, extension services and nutrition objectives. Repurposing agricultural support is therefore not simply about expanding farmers' input choices, but about aligning public investment, market incentives and institutional demand to accelerate the transition towards more resilient, diversified and nutrition-sensitive food systems.

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